PATENT ABSTRACTS OF JAPAN

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(54) CONNECTING MEMBER

(57)Abstract:

PROBLEM TO BE SOLVED: To suppress short-circuiting due to operation errors by providing a part which comprises an insulating base and a conductor and is connected to terminals of a substrate with a conductor of specified thickness and of the same width as the part.

SOLUTION: A connecting member comprises terminals of conductor and an insulating base supporting the conductor. Since a conductor less than 0.02 mm wide can not be subject to etching and a conductor of more than 1 mm width can be connected without heating and stretching the connecting member, the range between 0.03 and 0.1 mm is preferable. The pitch between terminals where the pitch is constant is in the range between 0.04 mm-0.02 mm since the etching can not be performed when the pitch is more than 2 mm and connection can be performed without heating and stretching when the pitch is more than 2 mm. By providing the part where the substrate and terminals are connected with conductor of width 1/3 or less than the width of the part, short- circuits due to operation errors can be suppressed.

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CLAIMS

[Claim(s)]

[Claim 1] Inlet connection material characterized by having a conductor of 1/3 or less thickness of the width of face in a place which is the inlet connection material for connecting with a substrate which has a portion with which a terminal was compared by juxtaposition in a fixed pitch with different direction electroconductive glue, consists of an insulating base material and a conductor, and is connected with a terminal of a substrate.

[Claim 2] Inlet connection material according to claim 1 to which width of face of a conductor is characterized by being the range of 0.02-1mm.

[Claim 3] Inlet connection material according to claim 1 or 2 characterized by being the range whose pitch between terminals of a portion with a fixed pitch is 0.02-2mm.

[Translation done.]

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[The technical field to which invention belongs] This invention relates to the inlet connection material for connecting with inlet connection material, especially a substrate.
[0002]
[Description of the Prior Art] Conventionally, connection of a substrate and a substrate was made with the connector, the cable, the jumper, etc. However, the actual condition can be reducing the part which the part in which a connector is attached becomes small with development of electronic equipment, comes to ask for the device of a low price with small and a thin shape -- expense spent on a connector must be reduced -- and is connected even with a jumper.
[0003] Furthermore, connection with the substrate which has minute electrode patterns, such as a liquid crystal display, is needed, and the method of connecting with the substrate which has the terminal pattern aligned with such a minute electrode pattern using anisotropy electric conduction adhesives is developed.
[0004] By the way, in such connection, the coefficient of thermal expansion of the substrate and liquid crystal substrate to connect differs, or since it must equip with a substrate and a liquid crystal substrate in piles again, what formed the terminal pattern of connection with a flexible base material in connection between a substrate and a liquid crystal substrate is used in many cases, and also when three sorts of base materials with which coefficient of thermal expansion differs must be combined, it is.
[0005] In such a case, when sticking a substrate and inlet connection material, alignment is performed heating and connecting with a stretch is proposed in inlet connection material.
[0006]
[Problem(s) to be Solved by the Invention] However, although it was effective in performing alignment and sticking the base materials from which coefficient of thermal expansion differs [connecting with a stretch] inlet connection material, heating when the terminal of the substrate to connect was located in á line with the single tier at the fixed gap, and sticking a substrate and inlet connection material, the technical problem that there are many terminals and between the terminals which adjoin with few activity errors short-circuits occurs.
[0007] This invention aims at offering the inlet connection material excellent in control of the short circuit by the activity error.
[0008]
[Means for Solving the Problem] Inlet connection material of this invention is inlet connection material for connecting with a substrate which has a portion with which a terminal was compared by juxtaposition in a fixed pitch with different direction electroconductive glue, consists of an insulating base material and a conductor, and is characterized by having a conductor of 1/3 or less thickness of the width of face in a place connected with a terminal of a substrate.
[0009] As for width of face of a conductor, it is desirable that it is the range of 0.02-1mm.
[0010] As for a pitch between terminals of a portion with a fixed pitch, it is desirable that it is the range of 0.02-2mm.
[0011]
[Embodiment of the Invention] In this invention, the semiconductor packages in which the cel of liquid

crystal was formed, such as a glass substrate, other printed wired boards, a flip chip, and a flat package, can be used for a substrate.

[0012] Width of face of a conductor cannot use the method of carrying out etching processing to it being less than 0.02mm in the usual patchboard, and is not economical, since it is efficiently connectable even if it heats and does not lengthen inlet connection material if 1mm is exceeded, it is desirable that it is the range of 0.02-1mm, and the range of further 0.03-0.1mm is more desirable. Moreover, since it is efficiently connectable even if it heats and does not lengthen inlet connection material if the method of carrying out etching processing to it being less than 0.02mm in the usual patchboard cannot be used for the pitch between the terminals of a portion with a fixed pitch, it is not economical and 2mm is exceeded, it is desirable that it is the range of 0.02-2mm, and the range of it is 0.04-0.2mm more preferably.

[0013] It is desirable that a terminal becomes the inlet connection material of this invention from the insulating base material which is a conductor and supports the conductor and its conductor. Specifically Are suitable for what is used for the usual printed wired boards, such as a metallic foil especially copper foil, and aluminium foil, forming a conductor in a conductor. To an insulating base material It is desirable that it is a flexible insulating material. Thickness A glass fabric epoxy resin impregnation base material 0.2mm or less, There are polyester film, a polyimide film, etc., and especially, a glass fabric epoxy resin impregnation base material and polyester film are excellent in portability and processability, and desirable. In addition, in order to adjust alignment of the terminal by the difference in the base material with which it heats and coefficient of thermal expansion differs, what has a uniform coefficient of thermal expansion of the base material of inlet connection material is more desirable, and can use the metal plate by which pre-insulation was carried out besides the above.

[0014]

[Example] In the configuration of a terminal pattern with a width of face of 0.03mm which stuck copper foil with a thickness of 18 micrometers on one side of a glass fabric epoxy resin base material where laminated HN-920 (the Hitachi Chemical Co., Ltd. make, trade name) which is a dry film for etching resist in MCL-E -679 (the Hitachi Chemical Co., Ltd. make, trade name) which is a copper-clad laminate with a thickness of 0.2mm, and it was arranged in parallel in 0.06mm pitch at it, in piles, ultraviolet rays are irradiated and the photo mask which penetrates light is developed. The printed wired board which formed etching resist, carried out etching clearance of the unnecessary part of the copper foil which is not covered with the etching resist, and formed the terminal pattern was produced. Spray spraying of the chemical etching liquid is carried out for the copper foil of MCL-E -679 (the Hitachi Chemical Co., Ltd. make, trade name) which is a copper-clad laminate with a thickness of 0.2mm which stuck copper foil with a thickness of 18 micrometers on one side of a glass fabric epoxy resin base material, HN-920 (the Hitachi Chemical Co., Ltd. make --) which is a dry film for etching resist what was made thin to 10 micrometers in thickness Laminate a trade name, and in the configuration of the terminal pattern with a width of face of 0.03mm arranged in parallel in 0.06mm pitch, in piles, irradiate ultraviolet rays and the photo mask which penetrates light is developed. Etching resist was formed, etching clearance of the unnecessary part of the copper foil which is not covered with the etching resist was carried out, the terminal pattern was formed, and inlet connection material was produced. On the terminal pattern of this inlet connection material, AC-7244 (the Hitachi Chemical Co., Ltd. nature, trade name) which is an anisotropy electric conduction adhesive film with a width of face of 1.2mm was laminated, and alignment was carried out to the printed wired board produced first, and at 170 degrees C, it heated and pressurized and pasted up by 2MPa(s) and the conditions for 10 seconds. Thus, although connection of 100 sheets was made, the faulty connection did not have one sheet, either.

[0015]

[Effect of the Invention] The inlet connection material which was excellent in control of the short circuit by the activity error with this invention can be offered as explained above.

[Translation done.]